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1. An interlevel dielectric structure comprising:
 - a first dielectric layer situated on a semiconductor substrate, said first dielectric layer having an upper surface;
 - a plurality of lines comprised of a conductive material extending along said upper surface of said first dielectric layer, each line of said plurality of lines having upper and lower surfaces, and adjacent lines of said plurality of lines having spaces situated therebetween, the lower surfaces of each line of said plurality of lines being in contact with said upper surface of said first dielectric layer;
 - a second dielectric layer above both said plurality of lines and said first dielectric layer, said second dielectric layer having a lower surface in contact with the upper surface of each line of said plurality of lines; and
 - a dielectric material situated in said space between adjacent lines of said plurality of lines, said dielectric material not extending over the upper surface of each line of said plurality of lines, the upper surface of said dielectric material being higher than the upper surface of each line of said plurality of lines, the lower surface of said dielectric material being lower than the lower surface of each line of said plurality of lines.
2. The interlevel dielectric structure as defined in Claim 1, wherein said dielectric material comprises PTFE.
3. The interlevel dielectric structure as defined in Claim 1, wherein at least one of the first and second dielectric layers comprises silicon dioxide.

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4. The interlevel dielectric structure as defined in Claim 1, wherein said conductive material is selected from the group consisting of polysilicon, aluminum, copper, tungsten, and multiple layers of TiN/Al/TiN, TiN/Al/Ti, W/TiN/Ti, or any combinations thereof.

5. The interlevel dielectric structure as defined in Claim 1, where the dielectric material has a dielectric constant of less than about 3.6.

1 6. An interlevel dielectric structure comprising:
2 a first dielectric layer situated on a semiconductor substrate, said first
3 dielectric layer having an upper surface;
4 a plurality of lines comprised of a conductive material extending along said
5 upper surface of said first dielectric layer; wherein:
6 each line of said plurality of lines has both a upper surface and a
7 lower surface;
8 adjacent lines of said plurality of lines have spaces situated
9 therebetween;
10 the lower surfaces of each line of said plurality of lines is in contact
11 with said upper surface of said first dielectric layer; and
12 the upper surface of at least one line of said plurality of lines has
13 thereon a layer of a refractory metal nitride;
14 a second dielectric layer above both said plurality of lines and said first
15 dielectric layer, said second dielectric layer having a lower surface in contact with
16 the upper surface of each line of said plurality of lines; and
17 a dielectric material situated in said space between adjacent lines of said
18 plurality of lines, said dielectric material not extending over the upper surface of
19 each line of said plurality of lines, the upper surface of said dielectric material being
20 higher than the upper surface of each line of said plurality of lines, the lower surface
21 of said dielectric material being lower than the lower surface of each line of said
22 plurality of lines.
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1 14. An interlevel dielectric structure comprising:
2 a first dielectric layer situated on a semiconductor substrate, said first
3 dielectric layer having an upper surface;
4 a plurality of lines comprised of a conductive material extending along said
5 upper surface of said first dielectric layer; wherein:
6 each line of said plurality of lines has both a upper surface and a
7 lower surface;
8 adjacent lines of said plurality of lines have spaces situated
9 therebetween;
10 the lower surfaces of each line of said plurality of lines is in contact
11 with said upper surface of said first dielectric layer;
12 the upper surface of at least one line of said plurality of lines has
13 thereon a layer of titanium nitride;
14 said layer of titanium nitride has thereon a silicon dioxide layer; and
15 said silicon dioxide layer has thereon said second dielectric layer;
16 a second dielectric layer above both said plurality of lines and said first
17 dielectric layer, said second dielectric layer having a lower surface in contact with
18 the upper surface of each line of said plurality of lines; and
19 a dielectric material situated in said space between adjacent lines of said
20 plurality of lines, said dielectric material not extending over the upper surface of
21 each line of said plurality of lines, the upper surface of said dielectric material being
22 higher than the upper surface of each line of said plurality of lines, the lower surface
23 of said dielectric material being lower than the lower surface of each line of said
24 plurality of lines

1 15. The interlevel dielectric structure as defined in Claim 14, wherein said
2 dielectric material comprises PTFE.
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4 16. The interlevel dielectric structure as defined in Claim 14, wherein at least one
5 of the first and second dielectric layers comprises silicon dioxide.
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7 17. The interlevel dielectric structure as defined in Claim 14, wherein said
8 conductive material is selected from the group consisting of polysilicon, aluminum, copper,
9 tungsten, and multiple layers of TiN/Al/TiN, TiN/Al/Ti, W/TiN/Ti, or any combinations
10 thereof.
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12 18. The interlevel dielectric structure as defined in Claim 14, where the dielectric
13 material has a dielectric constant of less than about 3.6.
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